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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,243	07/15/2003	Hans Jacobsen	JACO0002	8919

7590 01/19/2006

LAW OFFICES OF RONALD M. ANDERSON  
Suite 507  
600-108th Avenue N.E.  
Bellevue, WA 98004

EXAMINER
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LE, HUNG CHARLIE

ART UNIT	PAPER NUMBER
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3725

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/620,243	JACOBSEN, HANS	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hung C. Le	3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 44 is/are pending in the application.
- 4a) Of the above claim(s) 37,38,45 and 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 5, 9, 10, 12 - 15, 25 - 28, 39 - 44 is/are rejected.
- 7) ☒ Claim(s) 6 - 8, 11, 16 - 24, 29 - 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment & Election***

Applicant's amendment & election, see "AMENDMENT AND ELECTION IN RESPONSE TO RESTRICTION REQUIREMENT", filed 10/31/2005, with respect to Claims 1 – 36, 39 - 44 have been fully considered.

Claims 37, 38, 45 & 46 were cancelled by applicant.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 5, 9 – 10, 12 – 15, 25 – 28, 39 - 44 are rejected under 35

U.S.C. 103(a) as being unpatentable over Kimura et al. (US 6,715,334 B2) in view of Matsumoto et al. (US 6,959,573 B2).

With respect to Claims 1 & 25:

Kimura et al. discloses: A bending die (20) for use in manufacturing thick-walled bent pipe, comprising:

- (a) a first working surface (22, FIG. 1) extending longitudinally relative to a longitudinal axis of the bending die (20);
- (b) a second working surface (FIG. 1) extending longitudinally relative to the longitudinal axis of the bending die (20) and disposed adjacent to said first working surface (22); and
- (c) a frame (34) configured to provide support for said first and second working surfaces, while enabling said first and second working surfaces to move relative to the frame, such that a substantially fixed separation between adjacent edges of the first and second working surfaces is maintained, regardless of a rotational angular displacement of either of the first and second working surfaces (See FIG. 3).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claims 2 & 26:

Kimura et al. further discloses: said adjacent edges of said first and second working surfaces are separated by a gap having a predefined width, said gap affecting a configuration of the sheet metal (111a) formed with the bending die (20) (See FIGS. 1, 3, 5, 7, 9).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claim 3:

Kimura et al. further discloses: The adjacent edges of said first and second working surfaces substantially abut one another (See FIG. 3).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claims 4 & 27:

Kimura et al. further discloses: Said frame (34) comprises a first section and a second section, a position of said first section relative to said second section being adjustable to enable a width of a gap separating the adjacent edges of said first and second working surfaces to be adjusted to a desired dimension (See FIG. 3).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claim 5:

Kimura et al. further discloses: for each working surface (22):

- (a) a center of rotation is associated with the working surface;
- (b) relative to a portion of the working surface that is in contact with the metal sheet during metal forming, the center of rotation is disposed proximate to an inner edge of said portion; and

© regardless of the rotational angular displacement of the working surface, the center of rotation remains substantially fixed. (See FIG. 3)

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claim 9:

Kimura et al. further discloses: said frame (34) includes a general U-shaped portion defined by support members disposed adjacent to the end of one of the

first and second working surfaces (22), such that each rack gear (30) is attached to a different support member (See FIGS. 3 & 4A).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claim 10:

Kimura et al. further discloses: said first and second working surfaces (22, FIG. 1) are generally rectangular in shape.

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the



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teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claim 12:

Kimura et al. further discloses: Each of said first and second working surfaces (22) comprises an angled upper surface having a shape selected to facilitate over-bending of the sheet metal (See FIGS. 7C & 7D).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claim 13:

Kimura et al. further discloses: a resist element (FIG. 5) that applies a resisting force to said first and second working surfaces (22), the resisting force countering at least in part a force applied to deform the sheet metal (111a).

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Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claim 14:

Kimura et al. further discloses: the resist element comprises at least one of a spring (68) (See FIG. 5).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claims 15 & 28:

Kimura et al. further discloses: said resist element (FIG. 5) comprises:

(a) a channel, said channel having a dimension substantially equal to said fixed separation;

(b) an elongate block partially disposed in said channel, said elongate block having a dimension smaller than said fixed separation; and

© a spring (68) disposed in said channel so as to apply a restoring force against said elongate block in opposition to a deformation of the metal sheet (111a) into the channel, such that said elongate block is returned to an original position after the metal sheet is removed following the deformation of the metal sheet (111a) (See FIG. 5).

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

With respect to Claims 39 – 44:

The apparatus as disclosed by Kimura et al. is capable to perform the claimed method.

Matsumoto et al. teaches: A bending method and device for bending a workpiece.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the apparatus and method for manufacturing thick-walled bent pipe as disclosed by Kimura et al. with the teaching by Matsumoto in order to utilize the apparatus for small radius bending any workpiece.

### ***Allowable Subject Matter***

Claims 6 – 8, 11, 16 – 24, 29 - 36 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung C. Le whose telephone number is 571-272-

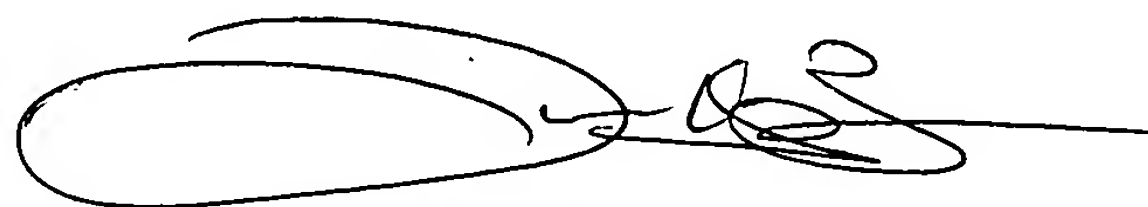
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8757. The examiner can normally be reached on M-F: 08:00am - 05:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 571-272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HCL  
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DERRIS H. BANKS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700